The Oldest Medical Document*

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THE partial text of an ancient Sumerian clay tablet has recently been published by Professor Samuel Noah Kramer of the University of Pennsylvania, who found the tablet amongst a collection buried for almost fifty years in the University Museum following removal from debris of Nippur where it had been buried for over four thousand years. The importance of a medical document from this early period, several hundred years before its nearest competitor, was apparent and Dr. Kramer set out on a long task at decipherment. Although written in perfectly good Sumerian cuneiform, translation is difficult because of the technical nature of the subject and the occurrence of many botanical and chemical terms; furthermore one side of the tablet is almost illegible due to damage. The tablet itself is of red clay, dug probably from the silt of the Euphrates, baked hard, and roughly four by seven inches in size. In one corner one may see the winding passage left by an unusually considerate worm, since he did not burrow through that part of the tablet containing writing; such tablets buried for centuries in semi-damp soil become soft and are often unable to impede the progress of what Assyrilogists call the first bookworms.

The physician who long ago set down these prescriptions lived in what we now call the Golden Age or the Third Dynasty of Ur, perhaps somewhere around 2100 B.C., during the last efflorescence of Sumerian culture before the Semitic wave of Babylonians swept over it. The Sumerians originally were perhaps neither Semitic nor Indo-European but may have been Asianics, originating in the northeast, even as far away as Turkestan, but by the time our tablet was written the land of Sumer had seen many races mingle. The chronological place of this tablet in the past of this region may be seen from the accompanying table, wherein may also be observed how various invaders, such as the al 'Ubaid, Uruk, and Jemdet Nasr peoples, produced a racial and cultural complex that was the foundation of the later high culture of the kingdom of Sumer. Each of these peoples probably also contributed to the first development of a written language, with origins in stylized animal and plant motifs on greenish-yellow al 'Ubaid ceramics and in crude pictographs on perishable materials. Through the centuries these pictures came to evolve into the simplified wedge-shaped char-

* Read at 55th Annual Meeting of the Medical Library Association, Los Angeles, California, June 19–22, 1956.

TABLE 1

History of Sumer

Date	Dynasty	Culture	Language
4500–3700 B.C.	Halafian	neolithic	
3700–3400 B.C.	al 'Ubaid	chalcolithic agriculturists	Mongolian-Turkestan type
	flood		
3400–3100 B.C.	Uruk	bronze age hill people	pictographic clay tablets
3100–2900 B.C.	Jemdet Nasr	invaders from the south	archaic cuneiform
2900–2650 B.C.	1st Dynasty of Ur	revolution	Sumerian cuneiform
2650–2550 B.C.	2nd Dynasty of Ur		
2550–2350 B.C.	Akkadian Dynasty	Sargon conquers from the north	Old Babylonian cuneiform
2350–2025 B.C.	3rd Dynasty of Ur	Golden Age	
2025–1750 B.C.	1st Babylonian Dynasty	Hammurabi	Neo-Babylonian cuneiform

acters made with a sharp stylus in the soft clay, losing their pictorial quality but still traceable in many cases back to their initial forms. Since the writing soon came to be a syllabic script, other languages, such as the Semitic Akkadian, could be written in it and thus it passed down through all the turmoil of the Mesopotamian world for two thousand years after Sumer as a nation was gone, and perhaps contributed to the formation of the earliest true alphabet through the Hurrians or other Anatolian peoples.

The tablet contains at least fifteen recipes or prescriptions for the preparation and use of divergent ointments and potions. There are two unfortunate omissions: no mention is made in any case of the disease for which the remedy was intended, and no specification of the quantities of the various ingredients is made. This may possibly indicate that in the circle for whom the tablet was written these prescriptions were so well known that quantities and indications for use were unnecessary, or, on the other hand, it may indicate some reticence on the part of the author to transmit all of his potent knowledge. We do not know who or for what purpose the tablet was written. Nor do we know if it was only one, perhaps the last, of a series of tablets, more complete indications for use having been stated on previous tablets. The tablet is also remarkable in shunning all mention of supernatural aspects of cure, and mentions no deities to which the doctor or patient may have recourse. Reading most books dealing with the medicine of ancient Babylonia, that is during the period after the eclipse of Sumer, one has become accustomed to think of mystical influences being uppermost, and of therapy being filled with incantations and superstitions, but here we find a document of an earlier period showing what we today

can only characterize as a very scientific approach: scientific in the sense that it was rational within the framework of their knowledge, just as ours is today.

Let us consider a few of the prescriptions Professor Kramer has translated. One reads something like this:

> "Pulverize white pear tree bark and the root of the moon-plant; dissolve in beer; let the man drink."

In this brief recipe and another in which the same ingredients are infused with wine and spread with various oils, we see several basic aspects of this early medical system. Drugs are mainly derived from the plant world and frequently these plants are either known to possess active principles or at least to belong to families containing very active plants; unfortunately, at present, little work has been done on the pharmacological properties of the plants indigenous to the Mesopotamian region. The "moon-plant" mentioned above is probably one of the *Menispermaceae*, plants which in many countries have been called "moon-plants" or "moon-flowers" because of the crescent-shaped seeds—our American *Menispermum* (even the generic name is similar to the Sumerian), known as parilla or moon-seed, contains an active alkaloid and the Asiatic species likewise contain other alkaloids possessing pharmacological activity. One also remembers that within this plant family there are *Cocculus*, the source of picrotoxin, and *Chondrodendron*, from which the curare alkaloids are obtained. Likewise, if one turns to a United States Pharmacopoeia of 1890, he will find "Fluidextract of Menispermum" and may feel he is not so far from ancient Sumer as he had imagined. It is further important to notice that whenever pulverized plants are to be extracted, an alcoholic beverage is used if heat is not necessary. They had undoubtedly learned that beer or wine had better extractant qualities than water, as well as adding to the palatability of the final preparation. An even greater knowledge of extraction may be noted in prescriptions designating the use of alkali in boiling water, their methods being crude but not too dissimilar from those used today in chemical laboratories for obtaining pure active principles. For alkali they apparently used the ash of a marsh plant *Salicornia*, a plant which we now know accumulates large quantities of alkaline salts. All of this presupposes a great deal of experimentation previous to the time this tablet was written, long periods of many failures and few successes to arrive at the degree of knowledge indicated here. Another prescription runs as follows:

> "Purify and pulverize the .... of a cow; pour water over it and over a myrtle branch, a star-plant, the root of the ab-tree, the bark of the pear tree and salt-peter; boil; pour the water off; treat the ailing organ with the water."

The ab-tree may well be *Commiphora opobalsamum* or balm of Gilead, related closely to the many plants which furnish us with balsams and resins, such as

myrrh, copal, and others. This small evergreen tree, growing around the Red Sea, and related to the rare elephant trees of our American desert, probably furnished stimulant oleo-resins that may have contributed to such therapy. Myrtle, of course, provides oils that are still used in proprietary remedies for bronchitis and cystitis. The use of salt-peter may also be noted, for they had found that extraction is often improved by salts. In fact, the obtaining of salt-peter, involving the treatment of nitrogenous waste matter with lime, boiling with wood-ashes, and evaporation, indicates that the Sumerians had advanced chemically much farther than had been previously suspected. In other recipes we find the use of asafoetida, cassia (wild senna), fir-resin, and several plants not yet botanically identified, as well as the organs of several animals. The efficacy of these preparations is difficult to evaluate since we do not know the purposes for which they are used, but we can, at least, say that they did contain active substances and were made in a generally intelligent manner. Since not all of the plants were native to the immediate neighborhood of Sumer, we must also suppose that expeditions for drug plants were sent out to distant places and that adequate systems for storage of the material were planned and provided.

Thus this one small tablet provides us with much evidence of a hitherto unknown area of medical history and gives us insight into the minds of those who lived four thousand years ago; in fact, indirect evidence of what must have gone before in the centuries not long ago considered barbarian and steeped in superstitious lore. More yet will emerge from this tablet as its translation approaches completion and some study is made into the ingredients mentioned, and a greater realization of how much later civilizations, as well as ours, stem from the early Sumerian peoples. Each advance into the past creates a more keen awareness of the continuity of culture and our debt to the ancient seekers of truth. In all phases of culture, the Sumerians had many "firsts," as so well brought out in the just-published book by Professor Kramer, *From the Tablets of Sumer*, wherein the Sumerians are brought within the realm of modern consciousness. The medical profession can justly be proud that their earliest document is from this people and embodies within it the sincere attempt to treat disease rationally.